Liana Reilly

U.S. Environmental Protection Agency

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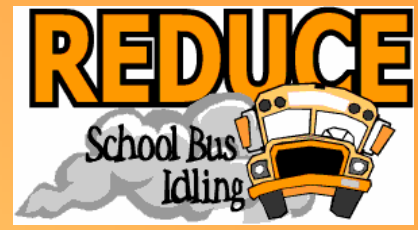
Overview

- Today's topic: reducing idling



- Format: Q and A 
  information sharing 
  interspersed with idling facts as well as idling myths.

- Conclude with a quick idling quiz and discussion.

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MAIN IDEAS

Buses are the safest way to transport children to school!!!

- Diesel exhaust is harmful!
- Unnecessary idling happens.
- There are things we can do now that not only decrease idling but save $$ and increase the life of bus engines!

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Idling defined

Idle:- lack worth or basis

- to run at low power and often disconnected usually so that power is not used for useful work (the engine is idling)

-Webster's Dictionary

AI=anti-idling

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“Idling gets you nowhere!”

City of Calgary

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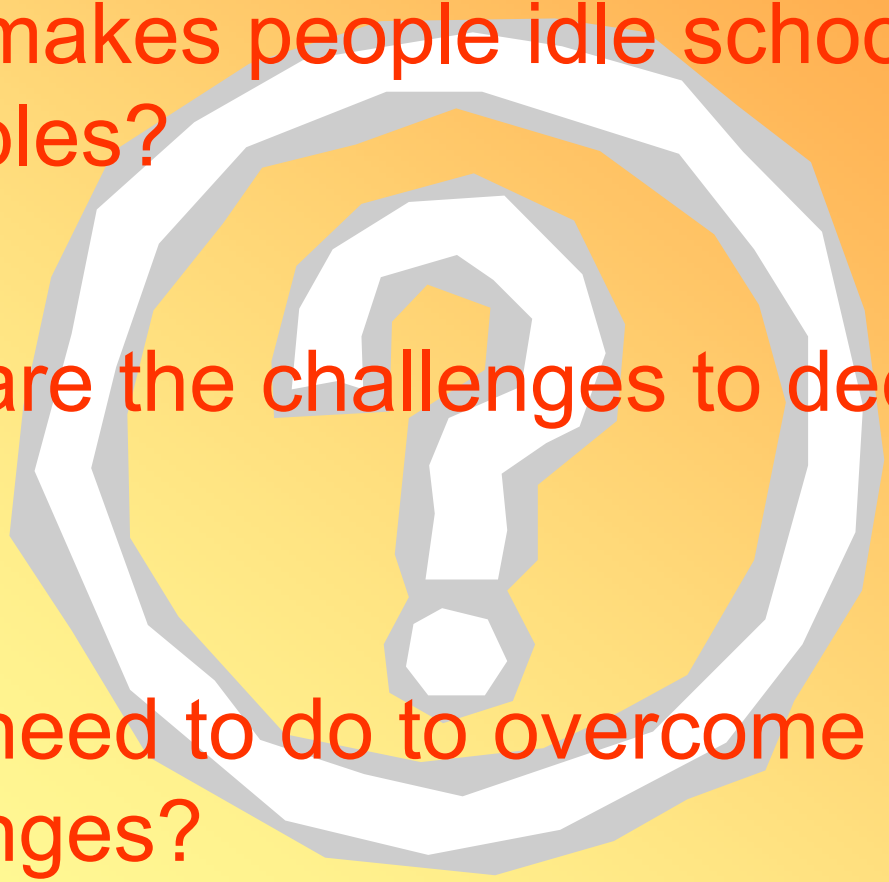
Questions for YOU

- What makes people idle school buses? Examples?
- What are the challenges to decreasing idling?
- What need to do to overcome these challenges?



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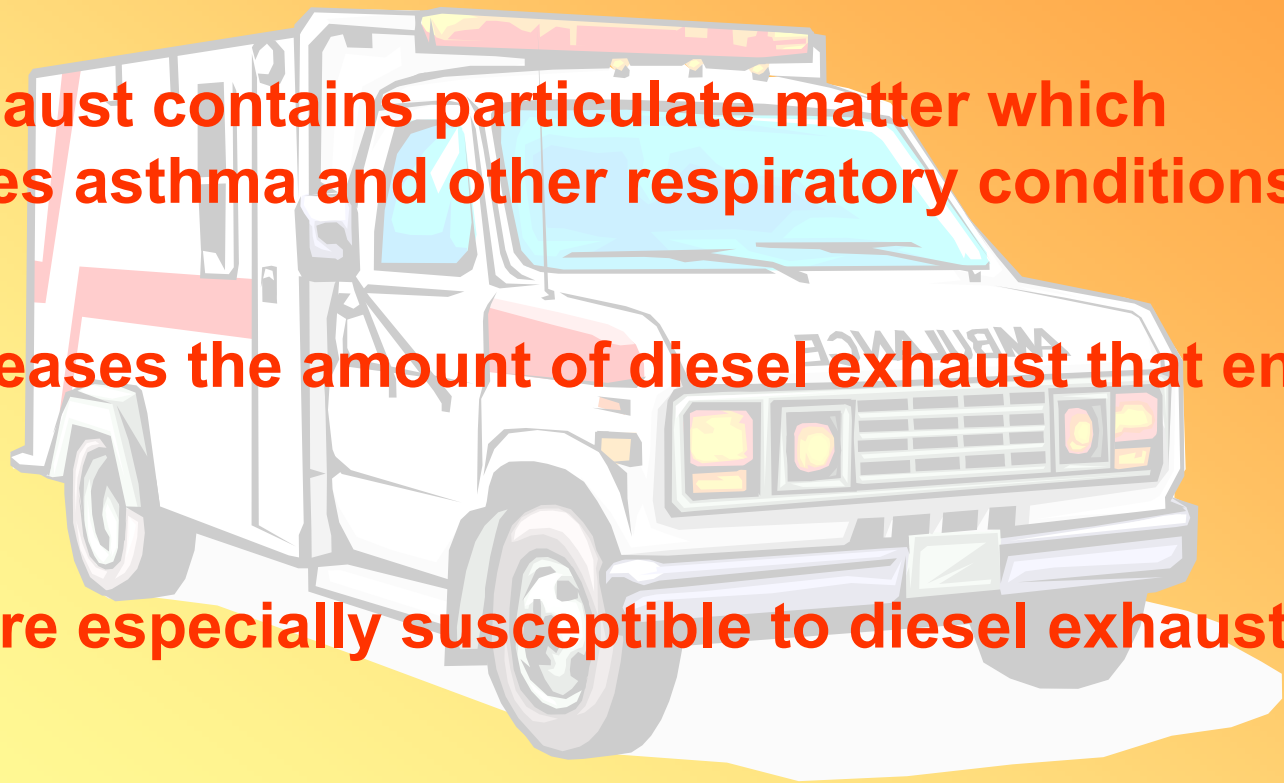
Idling is harmful-A

- Diesel exhaust contains carcinogenic substances!
- Diesel exhaust contains particulate matter which exacerbates asthma and other respiratory conditions.
- Idling increases the amount of diesel exhaust that enters a bus.
- Children are especially susceptible to diesel exhaust.



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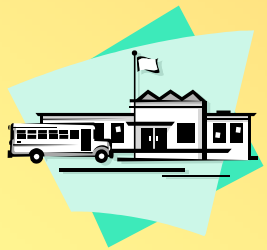
Idling is Harmful-B

- Students walk by idling buses and inhale large amounts of diesel exhaust.

- Idling buses often park under fresh air intakes at schools-causing diesel exhaust to get drawn into a schools indoor air.



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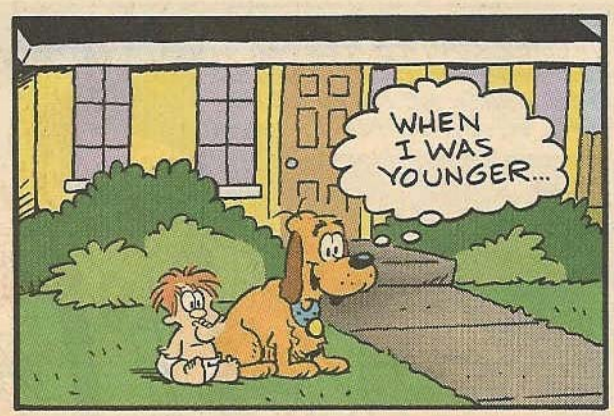
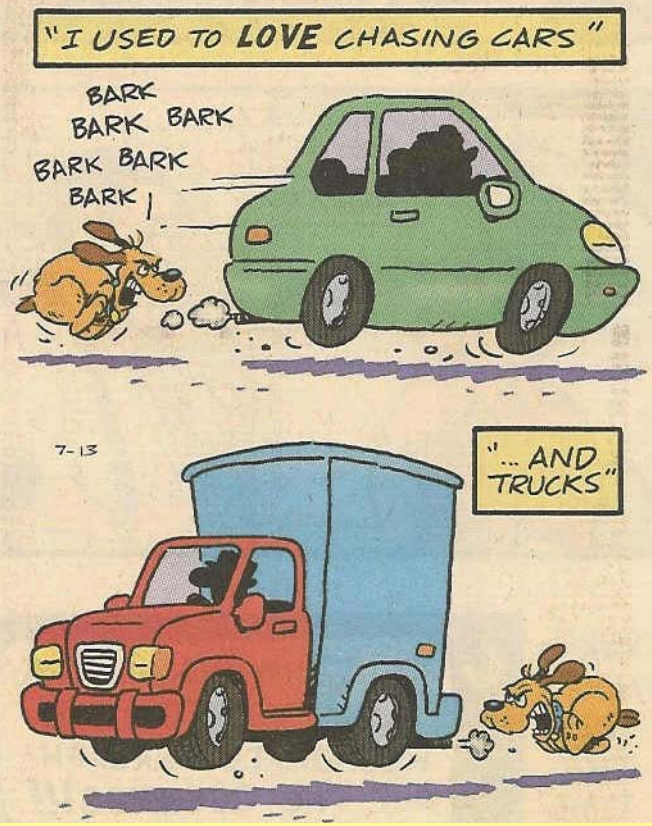
MARVIN

by Tom Armstrong





From The Star Ledger, Sunday July 13, 2003

Idling Observations-general

- **EPA contractor observed:**
  - **Excessive idling at majority of school sites.**
  - **Excessive idling is not just a winter phenomenon.**
  - **Most unnecessary idling is when students are loaded onto buses at school sites.**
  - **Excessive idling also occurs at fleet domiciles.**

Idling Observations-specifics

- Specifics
  - 15 of 17 buses at one high school ran for a a MINIMUM of 10 minutes! "The high school was enveloped in diesel fumes."
  - Some buses idled during entire stay at school.
  - Most bus and van operations at one NY school take place directly under the school's fresh air intakes.
  - A van at a NYC school idled for 15 minutes AFTER dropping off students (summertime).
  - Good news: some buses did not idle at all!

Idling Fact or Myth?

- Idling is necessary to warm up engines in winter.
- Fact or myth?
- MYTH!
- Electronically controlled engines need no more than 30 seconds to warm up.

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Why idle?

- Your thoughts!

- Keep bus warm
- Keep bus cool
- Mask outside noises
- Keep engine warm-avoid restarting engine
- Habit
- Safety
- Power
- Oil warmth

Why reduce idling?

- Protect children's health

- Protect environment
- Decrease noise pollution
- Save money-in terms of fuel and maintenance costs.
  - Save fuel (Idling wastes fuel)
  - Less frequent oil changes/lower maintenance costs
  - More miles until overhaul required
  - Increase engine life

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EXCEPTIONS

- Of course there are exceptions to every ‘rule’
- Temperature is below 20 degrees F
- Need to defrost the windshield
- Special cases-i.e. need to run a wheelchair lift
- Emergencies

- Safety First!

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Benefits of decreasing idling

- Protect Children's Health
- Protect Air Quality

- Minimize effects on climate change
- Save Energy
- Save Money

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Fact

- Molson Canada estimates that it is saving $225,000 annually from its idling control program.

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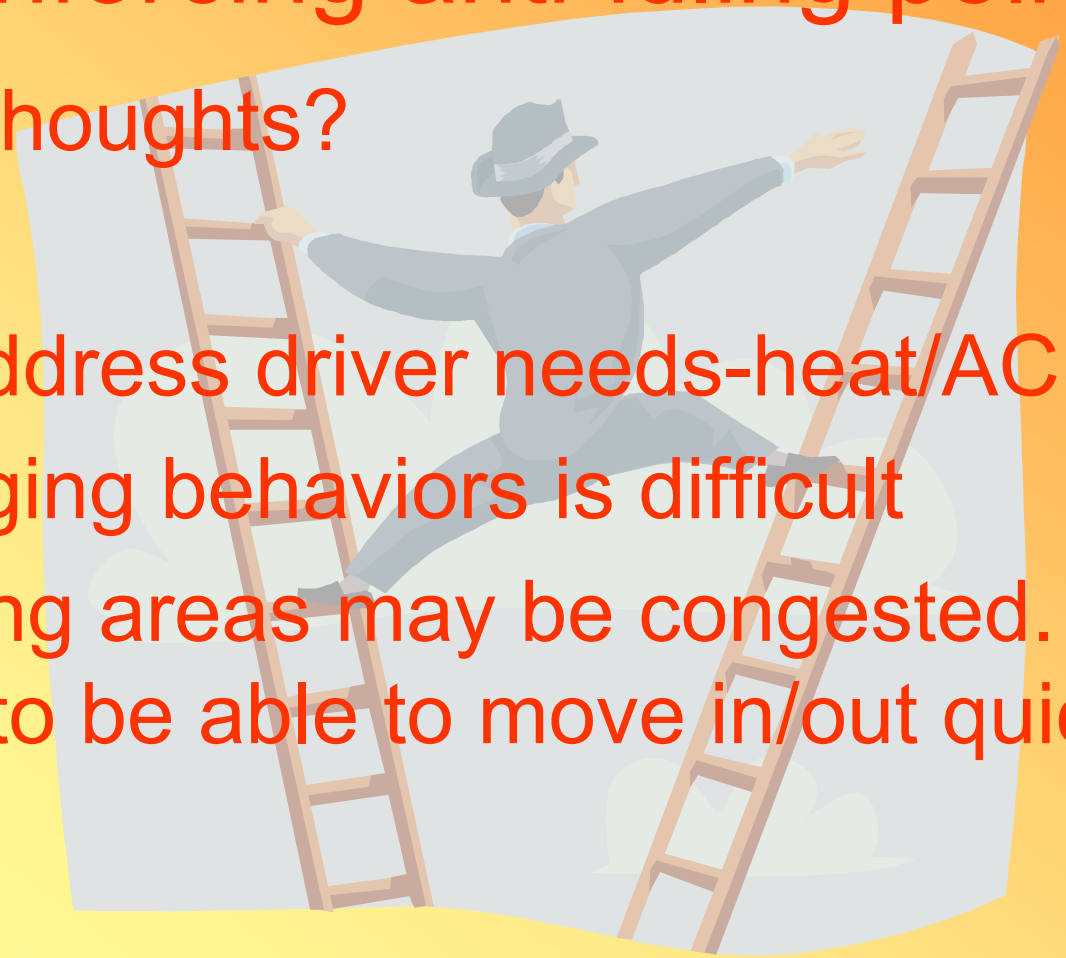
Challenges to creating and enforcing anti-idling policy



- Your thoughts?

- Not address driver needs-heat/AC
- Changing behaviors is difficult
- Loading areas may be congested. Drivers need to be able to move in/out quickly.

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FACT

- If a school fleet has 50 buses and each bus reduces its idling time by 30 minutes a day, it saves $2,250 per school year just from fuel savings!

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How to meet the challenges

- Thoughts?

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What EPA is doing to meet challenge of anti-idling-A

- Clean School Bus USA:
  - New initiative to decrease diesel emissions from school buses.

- Partner with schools and school districts
- MOU

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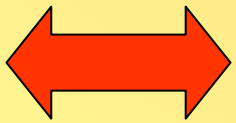
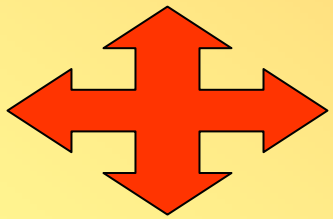


What EPA is doing to meet challenge of anti-idling-B

- CSB USA goal: decrease idling to reduce 20 million gallons of fuel/year.
- Gathering baseline data on idling.
- Developing an AI packet to assist schools in developing an AI program that works for them.
- EPA grant program!

What can be done

- Different levels of action
  - Supervisory and administrative changes
  - Driver behavior
  - Mechanical changes



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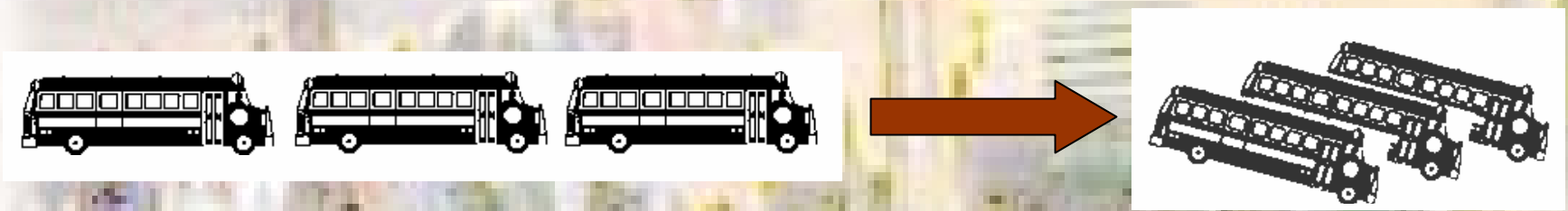
Supervisory Level-A

- **Modify bus routes**
  - Minimize kids time on the bus
- **Utilize staging areas-assess bus waiting zones.**
- **Adjust parking strategies**
  - Change tip to tail to diagonal or parallel.



- **Provide indoor spaces for drivers to wait so not have to be too hot or cold on the bus.**
- **Recognize drivers that decrease idling times.**

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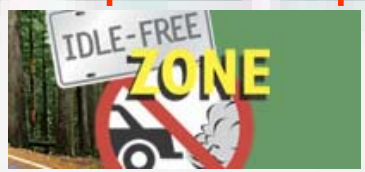
Supervisory Level-B

- Ask drivers to turn off buses as soon as arrive and to keep them off until they depart!
- Adopt and enforce a no-idling policy for buses and vans arriving to pick up students.
- Use AI signs/create and AI zone: include parents picking up kids as well as buses and vans.



- Educate-bus drivers as well as school staff about your efforts to decrease idling and their exposure to diesel exhaust.

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Idling Fact or Myth?

- The best way to warm a vehicle up is by driving.
- Fact or myth?
- FACT-with a precaution.
- Precaution: in cold whether avoid high speeds and rapid acceleration for the first 4 miles.

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Drivers-A

- Wait to start buses till all kids are on the bus.

- Don’t idle in storage yard!

- Establish a set procedure for loading children.

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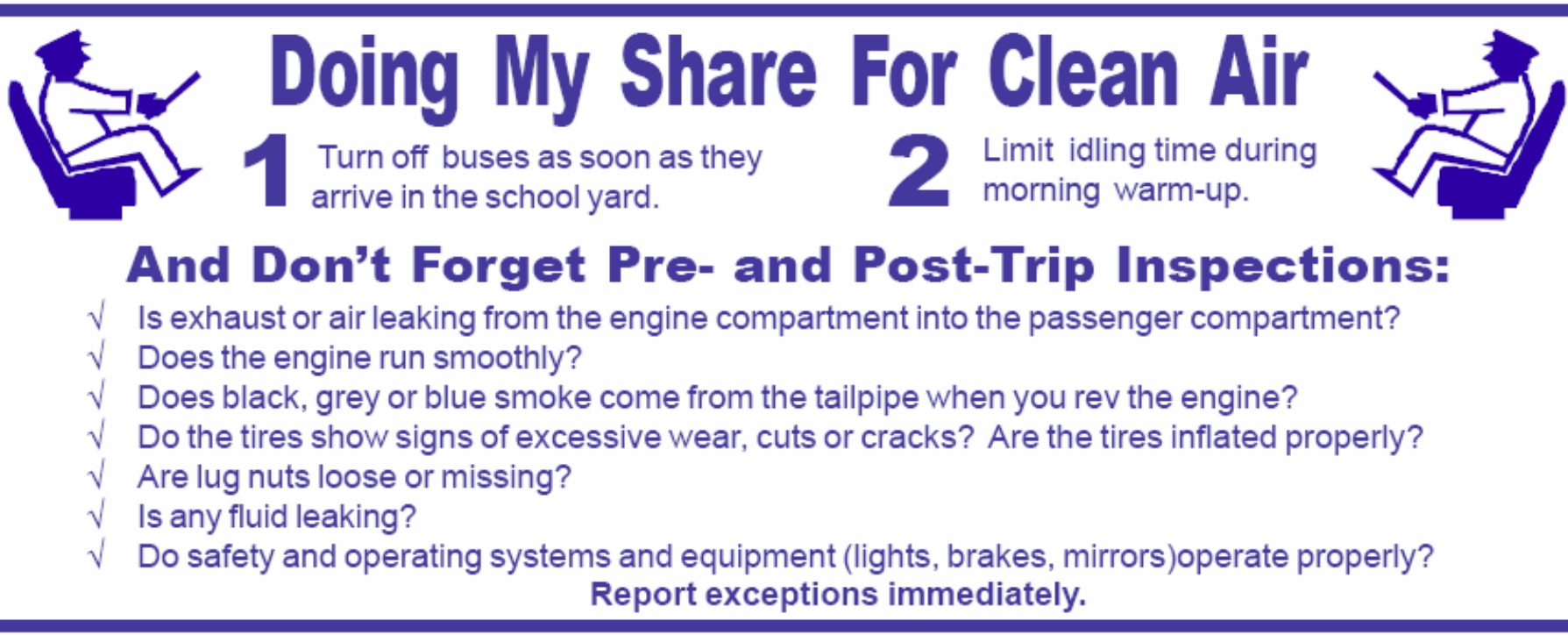
Drivers-B

Perform pre and post trip inspections



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Fact or Myth

- Driving a vehicle cuts warm-up times in half.

- FACT

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Idling Fact or Myth

- Idling excessively can damage an engine.
- Fact or Myth?

- FACT!
- Running the engine below its peak operating temperature causes incomplete combustion of fuel.

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Mechanical

- Routine Maintenance
- If necessary, change the circuit configuration of the bus so flashing lights run off the battery and NOT the engine.

- Use alternative technologies to warm the engine and to warm the bus.

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Fact or Myth

- Idling diesel engine vehicles actually lowers the coolant temperature faster than shutting off the engine.
- Fact or Myth?

- FACT!
- So-switching the engine off keeps the engine warm longer.

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Technology Alternatives to Idling

- Direct-fired heater
- Auxiliary power unit
- Automatic engine idle system

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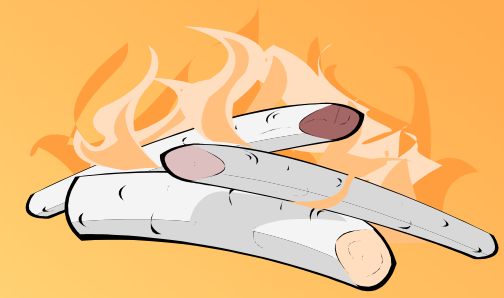
Direct-fired heater

- What is it?
  - Small combustion heater
- Benefits
  - Heats anywhere
  - Small
- Drawbacks
  - Can't cool
  - Requires battery power
- Cost
  - $1000-$2000



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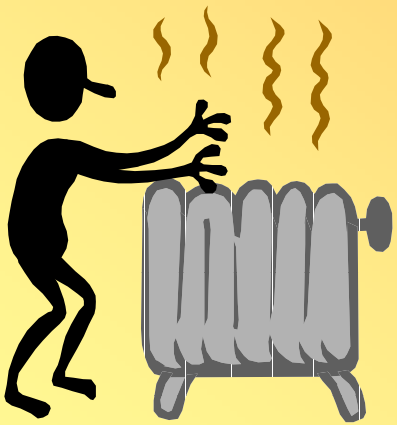
Auxiliary power unit (APU)



- What is it?
- Benefits
  - HVAC and power anywhere
- Drawbacks
  - Heavy
  - Large
  - More expensive than direct-heater

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Fact or Myth?

- Restarting the engine uses lots of fuel!
- Fact or Myth?
- MYTH!
- If idle for more than 10 seconds, you use more fuel than if you turned your engine off then back on!
- So-if you're stopped for more than 10 seconds, its most efficient to turn off your engines!

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Idling Fact or Myth

- Turning the engine on and off is bad for the engine.
- Fact or myth?
- MYTH!
- Frequent restarts will not cause a negative impact on engine components.

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Idling Quiz

A. School buses idle, on average
   a) 10 minutes a day
   b) 30 minutes a day
   c) 60 minutes a day

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Idling Quiz

B) Idling is necessary on cold winter days to ensure that all of the bus components are warm. True or False?

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Idling Quiz

C) Idling is only a winter problem. True or False.

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Idling Quiz

D) All of the following are ways to identify an idling vehicle except:

1. Exhaust fumes
2. Vibration of the vehicle
3. Moving tires
4. Running headlights

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Idling Quiz

E) An idling bus burns approximately one gallon of fuel for each:

1. 30 minutes of idling
2. 60 minutes of idling
3. 2 hours of idling
4. 6 hours of idling

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How’d you do?

- 0-1 Correct: GOOD MORNING! TIME TO WAKE UP!
- 2-3 Correct: Good job-you’re on your way to formulating an AI plan!
- 4 Correct: Great! You’re on your way to giving your own AI presentations!
- 5 Correct: EXCELLENT! You’re an anti-idling expert!

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Healthy Families
Clean Environment
Climate Change Centre
NO Idling

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QUESTIONS

and

DISCUSSION!

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Get on the bus!

- For more information contact:

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Main Resources

- Argonne National Laboratory-Transportation Technology Research and Development Center
- The City of Calgary
- Connecticut Department of Environmental Protection Anti-Idling Campaign
- Earthday Canada
- Greenest City
- Hamilton County Environmental Services
- Maine Department of Environmental Protection
- Mississauga Idle-Free Anti-Idling Campaign
- Natural Resources Canada
- US Environmental Protection Agency

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REDUCE

School Bus Idling

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